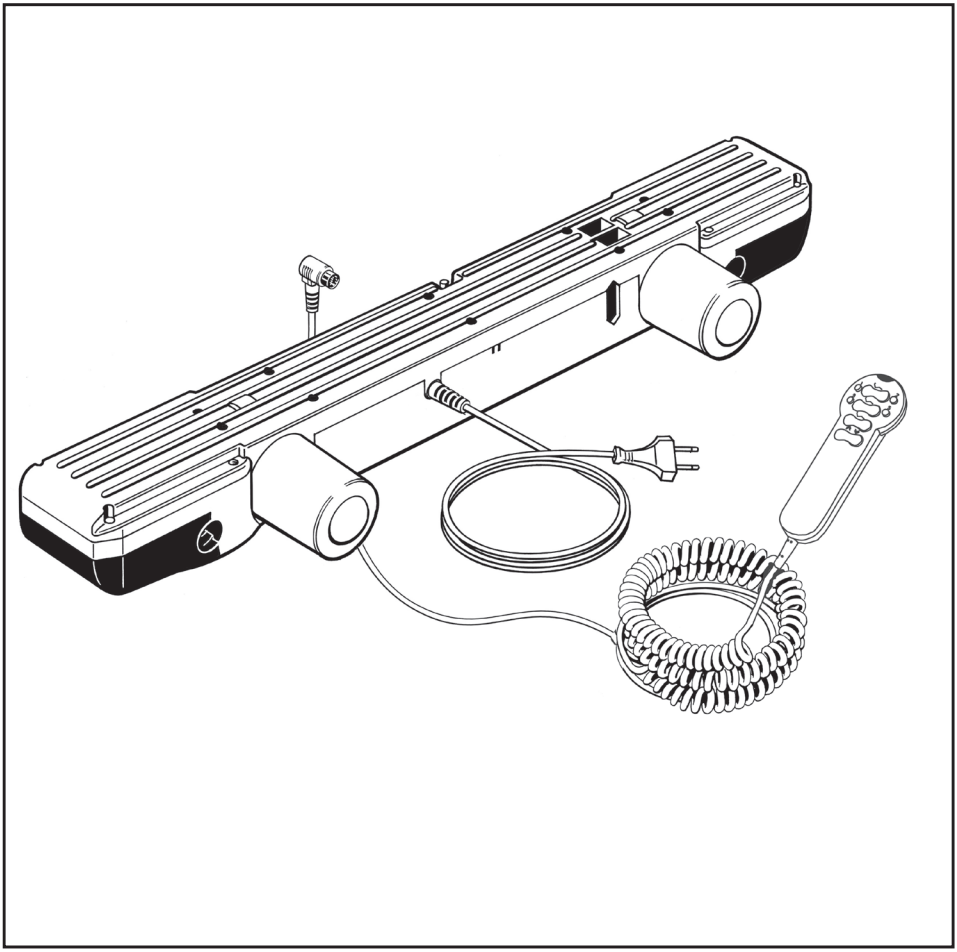
HOMELINE®
IMPROVING COMFORT

TWINDRIVE®
TD2



To learn more about LINAK please visit:

WWW.LINAK.COM

LINAK®
WE IMPROVE YOUR LIFE

Contents

Preface 4
Important information 5
Safety instructions 5
Before installation, reinstallation or troubleshooting 5
Before start-up 5
During operation 5
Repairs 6
Manufacturer's declaration 6
Misc. on the TD2 TWINDRIVE® system 7
Description of the TD2 TWINDRIVE® system 8
Mounting guidelines for the TWINDRIVE® 9
Mounting the handset and connection to the mains 10
The HB10 and HB20 series 10
How to change the 9V battery 12
Accessories and repair 12
Mains cut-off 13
Labels for TD2 TWINDRIVE®, HB10 and HB20 13
Disposal of LINAK's products 14
How to mount 15

Drawing appendix 17
Addresses 20

Preface

We are delighted that you have chosen a product from LINAK A/S. LINAK systems are high-tech products based on many years of experience in the manufacture and development of actuators, electric control boxes, controls, and chargers. We are also constantly improving our products to meet customer requirements.

This User Manual will tell you how to install, use, and maintain your LINAK TWINDRIVE® products.

We are sure that the TWINDRIVE® products will give you many years of trouble-free operation. Before our products leave the factory they undergo a full function and quality test. Should you nevertheless experience problems with your systems, you are always welcome to contact our service departments or service centres.

LINAK subsidiaries and distributors all over the world have authorised service centres, which are always ready to help you.

LINAK provides a warranty on all its products. This warranty, however, is subject to correct use in accordance with the specifications, maintenance being done correctly, and any repairs being carried out at a service centre, which is authorised to repair LINAK products.

Changes in installation and use of LINAK systems can affect their operation and durability. Therefore, changes must only be made according to agreement with LINAK A/S and changes are made at your own risk.

LINAK A/S

Important information

Important information on LINAK® products can be found under the following headings:

Warning!
Failure to comply with these instructions may result in accidents involving serious personal injury.

Failing to follow these instructions can result in the product being damaged or being ruined.

Safety instructions

Safe use of the system is possible only when the operating instructions are read completely and the instructions contained are strictly observed.

Failure to comply with instructions marked with the "NOTE" symbol may result in serious damage to the system or one of its components.

Persons who do not have the necessary experience or knowledge of the product/products must not use the product/products. Besides, persons with reduced physical or mental abilities must not use the product/products, unless they are under surveillance or they have been thoroughly instructed in the use of the apparatus by a person who is responsible for the safety of these persons.

Moreover, children must be under surveillance to ensure that they do not play with the product.

It is important for everyone who is to connect, install, or use the systems to have the necessary information and access to this User Manual.

If there is visible damage on the product it must not be installed.

Before installation, reinstallation, or troubleshooting:
- Stop the TD2
- Switch off the power supply and pull out the mains plug.
- Relieve the TD2 of any loads, which may be released during the work.

Before start-up:
- Make sure that the system has been installed as instructed in this User Manual.
- Make sure that the voltage is correct before the system is connected to the mains. (See TD2 label on page 10).
- System connection. The individual parts must be connected before connection to the mains.

(continued)

During operation

- Take care that the cables are not damaged.
- Unplug the mains cable on mobile equipment before it is moved.
- The products must only be used in an environment, which corresponds to their IP protection.

Repairs

In order to avoid the risk of malfunction, all TWINDRIVE® repairs must only be carried out by authorised LINAK workshops or repairers, as special tools must be used and special gaskets must be fitted. TWINDRIVE under warranty must also be returned to authorised LINAK workshops.

Warning!
If any of the TWINDRIVE® products are opened, there will be a risk of subsequent malfunction. Furthermore, the warranty will not cover, when the product has been opened by unautorised personnel.

Warning!
The TWINDRIVE® systems do not withstand cutting oil.

CE

LINAK®
WE IMPROVE YOUR LIFE

DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY

LINAK A/S
Smedevænget 8
DK - 6430 Nordborg

Name and address of the person authorized to compile the relevant technical documentation:
John Kling, Group Headquarters, Guderup, DK-6430 Nordborg, email jkl@linak.com

Herewith declares that LINAK Actuators and Actuator Systems comply with the following parts of the Machinery Directive 2006/42/EC, ANNEX I. *Essential health and safety requirements relating to the design and construction of machinery:*
1.5.1 Electricity supply. *Directive 2006/95/EC on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.*
1.5.10 Radiation, 1.5.11 External radiation. *Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility.*

The relevant technical documentation is compiled in accordance with part B of Annex VII and that this documentation or part hereof will be transmitted by post or electronically to a reasoned request by the national authorities.

This partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of this Directive, where appropriate.

Date: 2010-01-01

Signature:

John Kling
Certification and Regulatory Affairs

Misc. on the TD2 TWINDRIVE® system

This system is a TWINDRIVE system developed for leisure beds and for indoor use in private homes.

Warranty
There is 36 months' warranty on the TWINDRIVE® products TD2 and HB10/HB20 against manufacturing faults calculated from the production date of the individual products (see label). LINAK A/S' warranty is only valid in so far as the equipment has been used and maintained correctly and has not been tampered with. Furthermore, the system must not be exposed to violent treatment. In the event of this, the warranty will be ineffective/invalid. For further details, please see LINAK A/S ordinary conditions of sale.

Maintenance
Clean dust and dirt on the outside of the system, at appropriate intervals and inspect them for damage and breaks.
Inspect the connections, cables, and plugs and check for correct functioning as well as fixing points.

Check emergency lowering batteries yearly for their full capacity. If not, they have to be changed. Type 9V IEC LF 22.

The cleaners and disinfectants must not be highly alkaline or acidic (pH value 6-8).

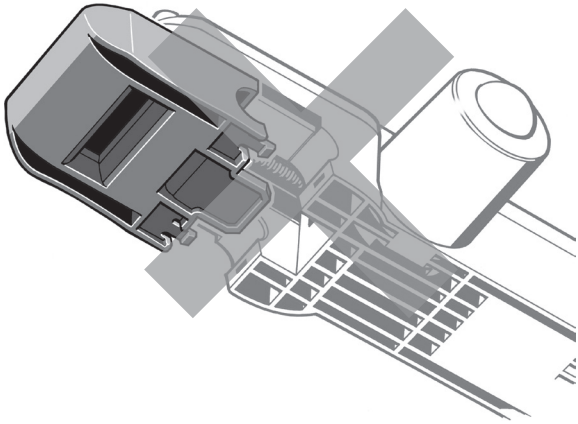
It is nok allowed to use solvents for cleaning up.

Description of the TD2 TWINDRIVE® system

Each TD2 TWINDRIVE® unit consists of 1 - 2 internal motors and a built-in control box function, which makes it a very compact unit. The mains cable is fixed. Only the handset and optional 1 - 2 external actuators must be connected.

Application of the TD2 TWINDRIVE® system:
Irrespective of the load the **duty cycle 10% ~ 6 min./ hour or max. 2 min. at continuous use** stated in the data sheets must **NOT** be exceeded as this will result in a superheating of the motor and the spindle nut. Exceeding the duty cycle will result in a dramatic reduction of the life of the system.

Do not open the closing device on TD2 during the operation as this may course malfunction and possibility of personal injuries.

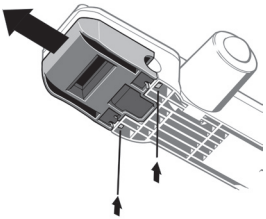


Be sure that the closing devices are in place before the TD2 is used.

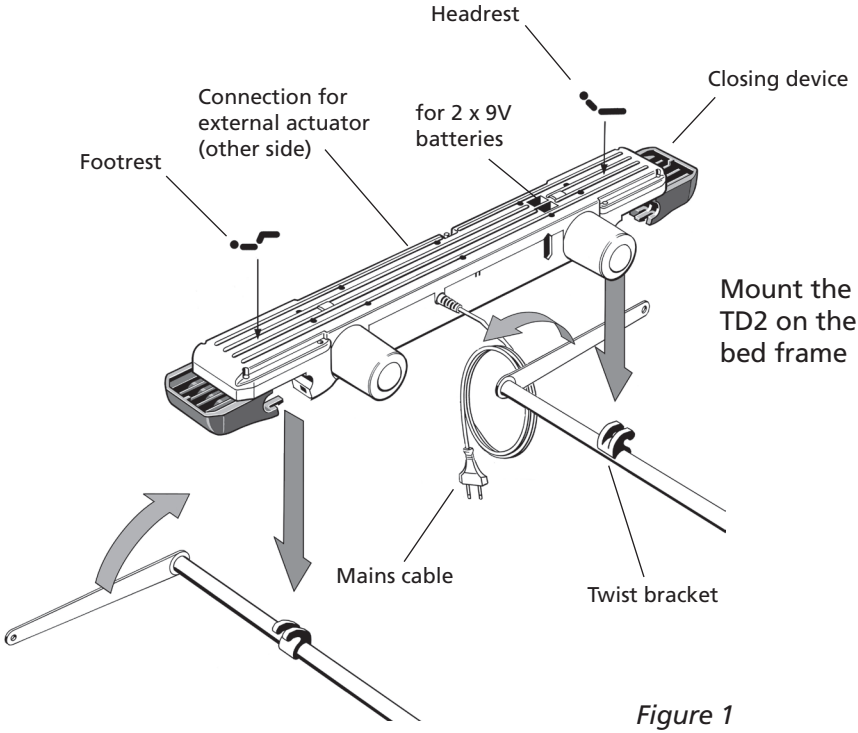
The TD2 TWINDRIVE® system range contains the following products:
- 1 TD2
- 1 HB10/HB20

Optional
- 9V batteries
- 1 - 2 actuators (LA27 or LA31)
- Memory and infrared (HB20)

Mounting guidelines for the TWINDRIVE® system

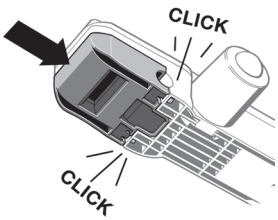


Open the closing devices by pushing the 2 pins and then pull the closing device out.



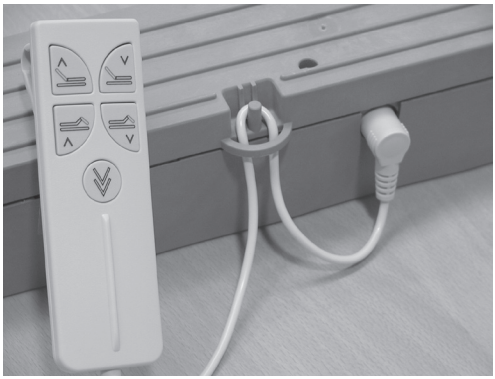
Mount the TD2 on the bed frame

Figure 1
(Assembly overview)



Make sure that the closing devices have been closed properly.

Mounting the handset and connection to the mains



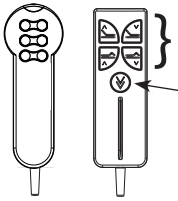
It is recommended to use the strain relief, otherwise the DIN-plug and the PCB may be damaged when overstraining the cable.

Please note that the TD2 must only be connected to the voltage stated on the label.

LINAK®
WE IMPROVE YOUR LIFE
Item : TD2000000A30007
Date : 2006.05.09
U in : 230-240 V ~, 50 Hz
P in : 50 W
Torque : 280 Nm
Angle : Head 77° / Foot 77°
Duty Cycle: 10%, Max. 2 min./18 min.
S.W. P/N.: 0077420 Ver. 1.16
NOT TO BE OPENED BY UNAUTHORIZED PERSONNEL
P.O.123456 – 0002 MADE BY LINAK A/S DENMARK

The HB10/HB20

Use of the handsets

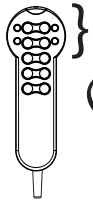


Up/down operational (1-2 channels)

Common operation up/down (option)

The up/down operation is only activated when holding the button down.

The HB20 (Receiver)



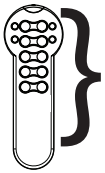
Up/down operation (1-4 channels)

Common operation up/down (option)

Memory positions
(3 positions)

Store Button

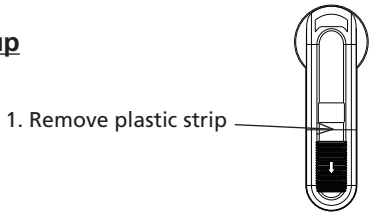
The HB20 (Transmitter)



Infrared handset consisting of 2 units. 1 reciever mounted as a standard handset with cable in the TD1 and a wireless unit.

The wireless unit is the actual handset.

Before start-up



Check that the transmission channel on the transmitter and the receiver is the same. If 2 beds are placed beside each other each bed must drive on their own channel to avoid undesirable drive.

Initialisation of the TD2 memory and infrared system.

To ensure optimum drive of the systems with memory, infrared, and extra channels it must be run out to the outward position and in again before use. This drive (out + in) must be done without stops.

How to store

- Run to the wanted position
- Push "S"
- Immediately hereafter push the wanted memory position (1, 2, or 3)
- The position is now stored

Run to stored memory position

- Push (1, 2, or 3) keep the button down until the position has been reached

The system runs sequentially.

To ensure optimal functioning of the system the receiver must not be covered.

Exchange/connection of 9V batteries (Type 9V IEC LF22)

1. Remove the clamps from the battery (Figure 3).
2. Use a blunt instrument with a diameter of Ø6 mm to remove the battery (Figure 4).
3. Push the battery upwards via the two holes in the bottom of the unit (Figure 5).
4. Dispose the batteries in an environmentally-friendly way.

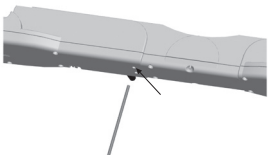


Figure 3

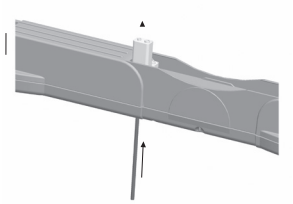


Figure 4

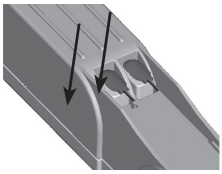


Figure 5

Accessories and repair

Ordering accessories
Order from your nearest LINAK® dealer or subsidiary.

Accessories
Please contact your nearest LINAK dealer for information.

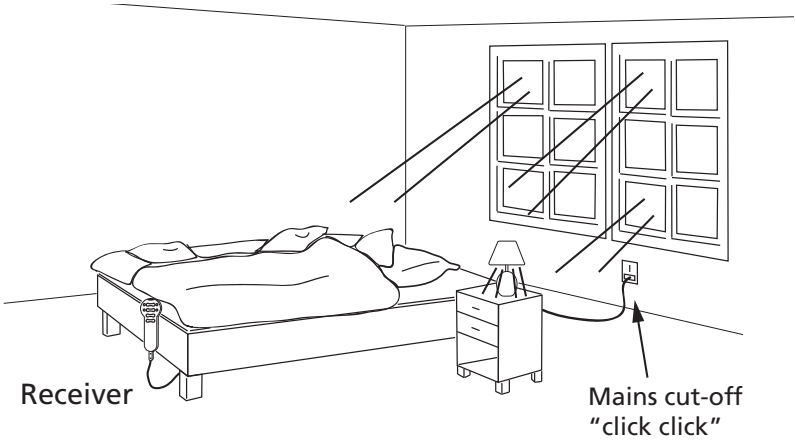
Repairs

Systems should only be repaired by an authorised LINAK service centre or engineer. Systems to be repaired under warranty must be sent to an authorised LINAK service centre.

Warning!
By unauthorised opening of the system there is a risk that it may malfunction at a later date. Furthermore the warranty will not cover, when the product has been opened by unauthorised personnel.

Spare parts

Please contact your nearest LINAK dealer for information on spare parts.



Mains cut-off

If you observe that the mains cut-off does not disconnect, but keeps clicking when the TWINDRIVE motor is running it may be because the IR-receiver is exposed to sunlight or light from a lamp. If this should be the case we recommend placing the receiver at an edge of the bed where this cannot occur.

Label for the TD2 TWINDRIVE® System:

LINAK®
WE IMPROVE YOUR LIFE
Item : TD2000000AB0007
Date : 2006.05.09
U in : 230-240 V ~, 50 Hz
P in : 50 W
Torque : 280 Nm
Angle : Head 77° / Foot 77°
Duty Cycle: 10%, Max. 2 min./18 min.
S.W. P/N.: 0077420 Ver. 1.16
NOT TO BE OPENED BY UNAUTHORIZED PERSONNEL
P.O.123456 – 0002 MADE BY LINAK A/S DENMARK

Label for the HB10 Handset :

Label for the HB20 Handset :

Disposal of LINAK's products
As LINAK's customers often ask us how our products can be disposed of or scrapped we have prepared this guidance that enables a classification to different waste fractions for recycling or combustion.

Guidance
We recommend to disassemble our product into as many fractions as possible at the disposal and try to make it recycable. As examples of main groups within waste fractions we can mention:

Metal, plastic, cable shoe, combustible waste, and collection for recovery.

Some of these main groups can be subdivided, e.g. metal can be divided into iron, stainless steel, and aluminium and alloy steel. Plastic can e.g. be divided into ABS, PA, PE, and PP.

As an example of sorting, please find below a list stating in which recycling groups the differenct components of LINAK's products ought to be placed:

Product	Components	Recycling group
Actuator:	Spindle and motor Plastic housing Cable	Scrap Plastic recycling or combustion Cable scrap or combustion
Control box:	PCB Plastic housing Cable Transforme Batteries	Electronic scrap Plastic recycling or combustion Cable scrap Scrap Recovery
Handset/Control:	Plasic housing Cable PCB	Plastic recycling or combustion Cable scrap Electronics scrap

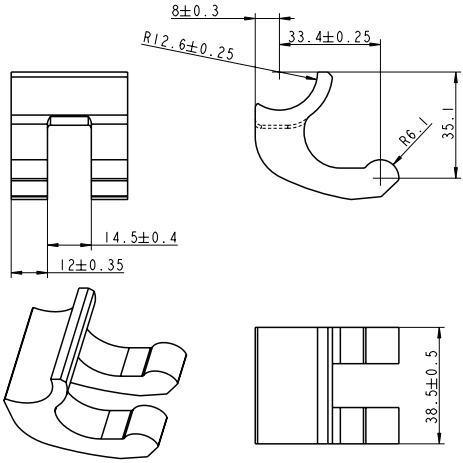
By now almost all our casted plastic parts are supplied with an interior code for plastic type and fibre contents, if any.

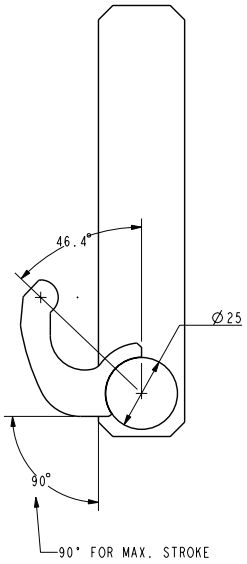
Main groups of disposal

Product main groups	Scrap	Cable scrap	Electronic scrap	Plastic recycling or combustin	Comments
LA27	X	X		X	
LA31	X	X	X	X	
TD2	X	X			The metals can be sorted for steel or aluminum
HB10		X	X	X	
HB20		X	X	X	
DJB			X	X	

How to mount (in chronological order):
Welding the twist bracket on the frame (0701033)

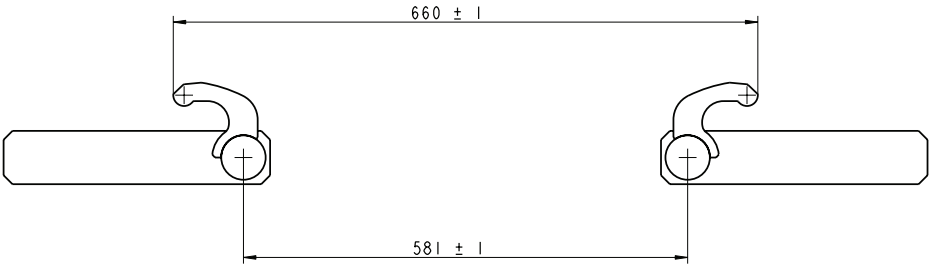
1) For the TD2 it is important that one does not weld on the outside of the twist bracket because there is not room for a welding seam in the motor housing. One may weld the bracket along the whole length of its ends.



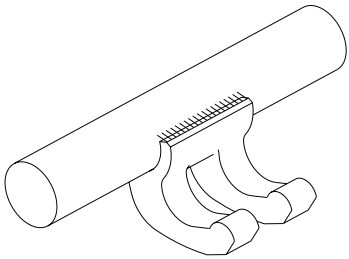


2) To maintain the correct angle of rotation of the headrest and the footrest it is important that the twist bracket is welded according to the above instructions.
Non-compliance with the instructions could lead to a smaller angle of rotation or in a worst case damage to the TD2.

It is very important that the axle distance is kept.



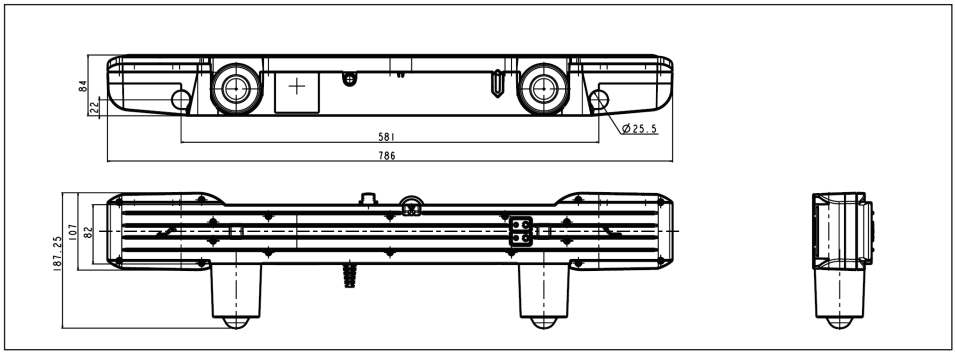
Example for correct welded twist bracket to the bed frame.



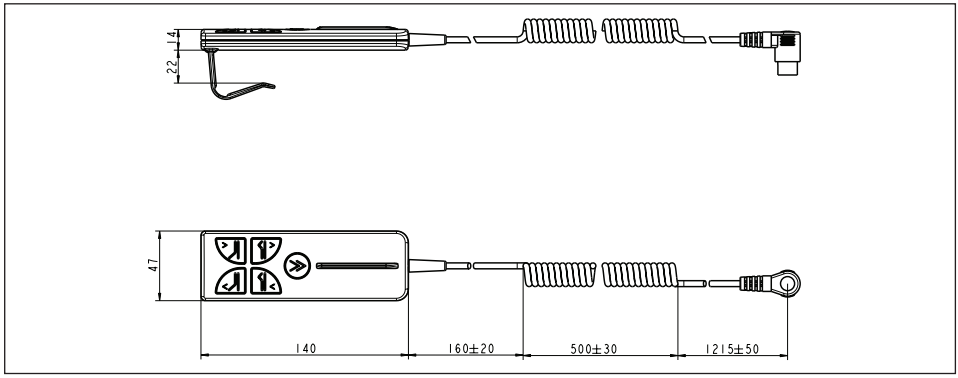
3) Before mounting, both mounting brackets must be pulled out to their outer position by pushing them back. This gives freedom of movement to the bed bracket. Mounting is done by pushing the bed bracket into the TD2 unit and thereafter by pushing the mounting brackets back again.

DRAWING APPENDIX

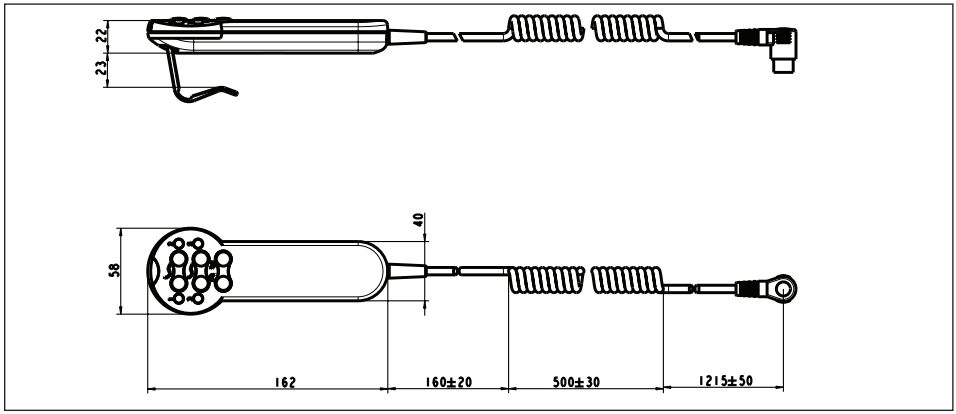
TWINDRIVE® TD2 System:



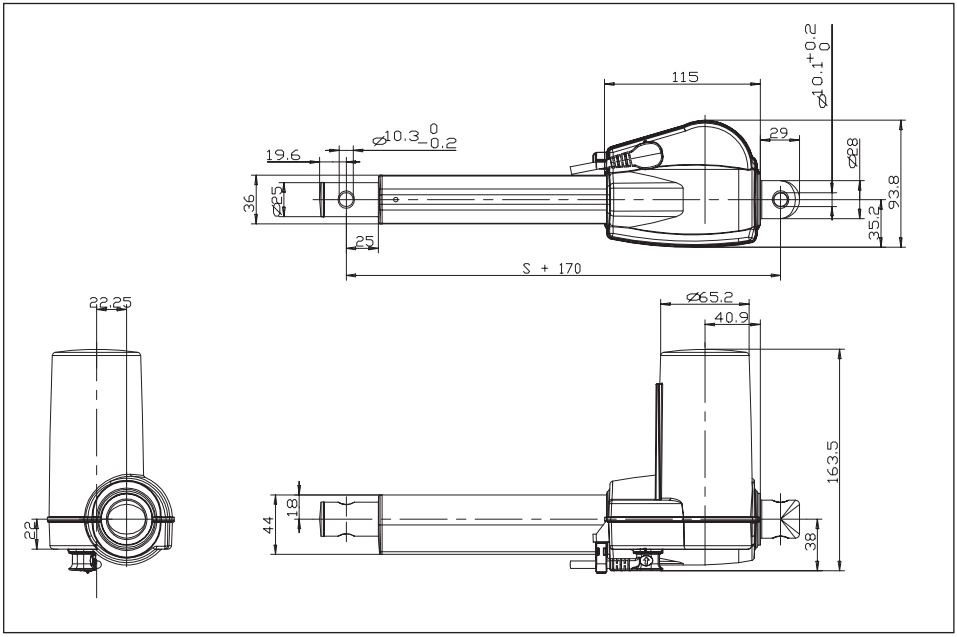
HB10



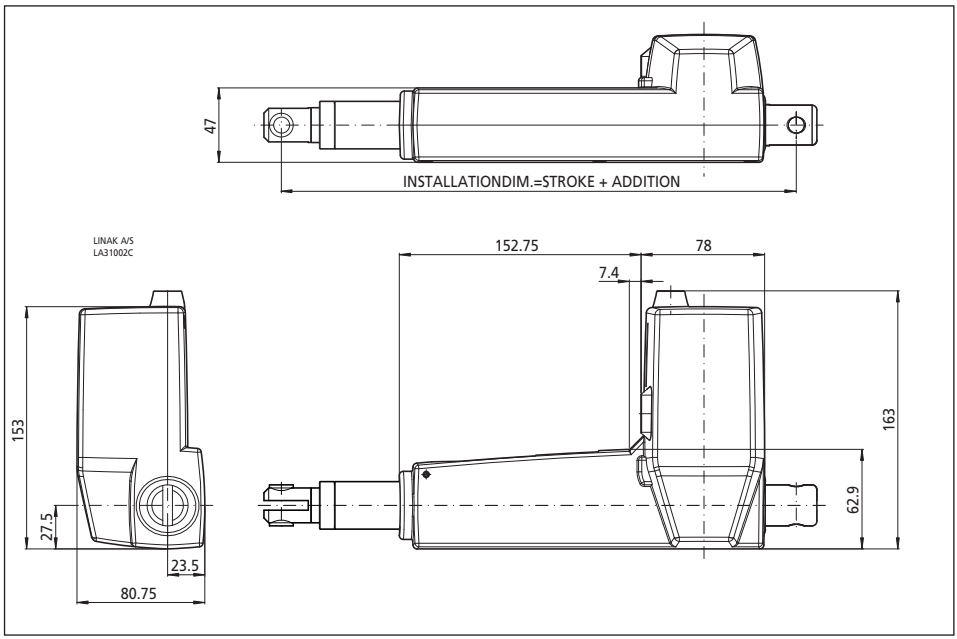
HB20



LA27


115
ø10.1+0.2 0
ø10.3 0 -0.2
19.6
29
ø28
36
ø25
93.8
35.2
25
S + 170
22.25
ø65.2
40.9
163.5
22
44
18
38

LA31


47
INSTALLATIONDIM.=STROKE + ADDITION
LINAK A/S
LA31002C
152.75
78
7.4
153
163
27.5
62.9
23.5
80.75

LINAK APPLICATION POLICY

The purpose of the application policy is to define areas of responsibilities in relation to applying a LINAK product defined as hardware, software, technical advice, etc. related to an existing or new customer application.

LINAK products as defined above are applicable for a wide range of applications within the Medical, Furniture, Desk, and Industry areas. Yet, LINAK cannot know all the conditions under which LINAK products will be installed, used, and operated, as each individual application is unique.

The suitability and functionality of the LINAK product and its performance under varying conditions (application, vibration, load, humidity, temperature, frequency, etc.) can only be verified by testing, and shall ultimately be the responsibility of the LINAK customer using any LINAK product.

LINAK shall be responsible solely that the LINAK products comply with the specifications set out by LINAK and it shall be the responsibility of the LINAK customer to ensure that the specific LINAK product can be used for the application in question.

FACTORIES

CHINA
LINAK (Shenzhen) Actuator Systems, Ltd.
Phone: +86 755 8610 6656
Fax: +86 755 8610 6990
E-mail: sales@linak.cn
www.linak.cn

DENMARK
LINAK A/S - Group Headquarters, Guderup
Phone: +45 73 15 15 15
Fax: +45 74 45 80 48
Fax: +45 73 15 16 13 (Sales)
E-mail: info@linak.com
www.linak.com

SLOVAKIA
LINAK Slovakia s.r.o.
Phone: +421 51 75 63 414
Fax: +421 51 75 63 410
E-mail: jp@linak.sk
www.linak.com

USA
LINAK U.S. Inc.
North and South American Headquarters
Phone: +1 502 253 5595
Fax: +1 502 253 5596
E-mail: info@linak-us.com
www.linak-us.com

SUBSIDIARIES

AUSTRALIA
LINAK Australia Pty. Ltd
Phone: +61 3 8796 9777
Fax: +61 3 8796 9778
E-mail: sales@linak.com.au
www.linak.com.au

AUSTRIA
LINAK Repräsentanz Österreich (Wien)
Phone: +43 (1) 890 7446
Fax: +43 (1) 890 744615
E-mail: info@linak.de
www.linak.at

BELGIUM & LUXEMBOURG
LINAK Actuator-Systems NV/SA
Phone: +32 (0)9 230 01 09
Fax: +32 (0)9 230 88 80
E-mail: info@linak.be
www.linak.be

BRAZIL
LINAK Do Brasil Comércio De Atuadores Ltda.
Phone: +55 (11) 2832 – 7070
Fax: +55 (11) 2832 – 7060
E-mail: info@linak.com.br
www.linak.com.br

CANADA
LINAK Canada Inc.
Phone: +1 502 253 5595
Fax: +1 416-255-7720
E-mail: info@linak.ca
www.linak-us.com

CZECH REPUBLIC
LINAK C&S S.R.O.
Phone: +420581741814
Fax: +420581702452
E-mail: ponizil@linak.cz
www.linak.cz

DENMARK
LINAK Danmark A/S
Phone: +45 86 80 36 11
Fax: +45 86 82 90 51
E-mail: linak@linak-silkeborg.dk
www.linak.dk

FINLAND
LINAK OY
Phone: +358 10 841 8700
Fax: +358 10 841 8729
E-mail: linak@linak.fi
www.linak.fi

FRANCE
LINAK France E.U.R.L
Phone: +33 (0) 2 41 36 34 34
Fax: +33 (0) 2 41 36 35 00
E-mail: linak@linak.fr
www.linak.fr

GERMANY
LINAK GmbH
Phone: +49 6043 9655 0
Fax: +49 6043 9655 60
E-mail: info@linak.de
www.linak.de

INDIA
LINAK A/S India Liaison Office
Phone: +91 120 4393335
Fax: +91 120 4273708
E-mail: info@linak.in
www.linak.in

IRELAND
LINAK UK Limited - Ireland
Phone: +44 (0)121 544 2211
Fax: +44 (0)121 544 2552
+44 (0)796 855 1606 (UK Mobile)
+35 387 634 6554 (Republic Of Ireland Mobile)
E-mail: sales@linak.co.uk
www.linak.co.uk

ITALY
LINAK Italia S.r.l.
Phone: +39 02 48 46 33 66
Fax: +39 02 48 46 82 52
E-mail: info@linak.it
www.linak.it

JAPAN
LINAK K.K.
Phone: 81-45-533-0802
Fax: 81-45-533-0803
E-mail: linak@linak.jp
www.linak.jp

MALAYSIA
LINAK Actuators Sdn. Bhd.
Phone: +60 4 210 6500
Fax: +60 4 226 8901
E-mail: info@linak-asia.com
www.linak.my

NETHERLANDS
LINAK Actuator-Systems B.V.
Phone: +31 76 5 42 44 40
Fax: +31 76 5 42 61 10
E-mail: info@linak.nl
www.linak.nl

NEW ZEALAND
LINAK New Zealand Ltd.
Phone: +64 9580 2071
Fax: +64 9580 2072
E-mail: nzsales@linak.com.au
www.linak.co.nz

NORWAY
LINAK Norge AS
Phone: +47 32 82 90 90
Fax: +47 32 82 90 98
E-mail: info@linak.no
www.linak.no

POLAND
LINAK Polska
Phone: +48 (22) 500 28 74
Fax: +48 (22) 500 28 75
E-mail: dkreh@linak.dk
www.linak.pl

REPUBLIC OF KOREA
LINAK Korea Ltd.
Phone: +82-(0)2-6231-1515
Fax: +82-(0)2-6231-1516
E-mail: scully@linak.kr
www.linak.kr

RUSSIAN FEDERATION
000 LINAK
Phone: +7 495 280 14 26
Fax: +7 495 687 14 26
E-mail: info@linak.ru
www.linak.ru

SPAIN
LINAK Actuadores, S.L.u
Phone: +34 93 588 27 77
Fax: +34 93 588 27 85
E-mail: linakact@linak.es
www.linak.es

SWEDEN
LINAK Scandinavia AB
Phone: +46 8 732 20 00
Fax: +46 8 732 20 50
E-mail: info@linak.se
www.linak.se

SWITZERLAND
LINAK AG
Phone: +41 43 388 31 88
Fax: +41 43 388 31 87
E-mail: info@linak.ch
www.linak.ch

TAIWAN
LINAK A/S Taiwan Representative Office
Phone: +886 2 27290068
Fax: +886 2 27290096
Mobile: +886 989292100
E-mail: michael.chen@linak.com.tw
www.linak.com.tw

TURKEY
LINAK Ith. İhr. San. ve Tic. A.Ş.
Phone: + 90 312 4726338
Fax: + 90 312 4726635
E-mail: info@linak.com.tr
www.linak.com.tr

UNITED KINGDOM
LINAK UK Limited
Phone: +44 (0)121 544 2211
Fax: +44 (0)121 544 2552
E-mail: sales@linak.co.uk
www.linak.co.uk

DISTRIBUTORS

ARGENTINA
Novotec Argentina SRL
Phone: +[54] (11) 4303-8900
+[54] (11) 4303-8989
Fax: +[54] (11) 4032-0184
E-mail: info@novotecargentina.com
www.novotecargentina.com

AUSTRALIA
Ballarat Industrial Supplies
www.ballind.com.au

BL Shipways & Co
www.blshipway.com.au

Gas Strut Marine and Industrial
www.gasstrutmarine.com.au

Prime Motion & Control
www.primehyd.com.au

West Vic Industrial Supplies
www.westvicindustrial.com.au

COLOMBIA
MEM Ltda
Phone: +[57] (1) 334-7666
Fax: +[57] (1) 282-1684
E-mail: servicioalcliente@memltda.com.co
www.memltda.com.co

INDONESIA
Pt. Himalaya Everest Jaya
Phone: +6 221 544 8956,
+6 221 544 8965
Fax: +6 221 619 4658,
+6 221 619 1925
E-mail: hejplastic-div@centrin.net.id
www.hej.co.id

IRAN
Bod Inc.
Phone: +98 2188998635-6
Fax: +98 2188954481
E-mail: info@bod.ir
www.bod.ir

PERU
Percy Martin Del Aguila Ubillus
Phone: +51 99-883-9879

RUSSIAN FEDERATION
000 FAM
Phone: +7 812 3319333
Fax: +7 812 3271454
E-mail: purchase@fam-drive.ru
www.fam-drive.ru

SINGAPORE
Servo Dynamics Pte. Ltd.
Phone: +65 6844 0288
Fax: +65 6844 0070
E-mail: servodynamics@servo.com.sg
www.servo.com.sg

SOUTH AFRICA
Industrial Specialised Applications CC
Phone: +27 11 312 2292 or +27 11 2077600 (Switch Board)
Fax: +27 11 315 6999
E-mail: garth@isagroup.co.za
www.isaza.co.za

UNITED ARAB EMIRATES
Mechatronics
Phone: +971 4 267 4311
Fax: +971 4 267 4312
E-mail: mechtron@emirates.net.ae
www.mechatronics.ae

For contact details on other countries please visit *www.linak.com* or contact:

LINAK INTERNATIONAL
Phone: +45 73 15 15 15
Fax: +45 74 45 90 10
Fax: +45 73 15 16 13 (Sales)
E-mail: info@linak.com
www.linak.com

Terms of use
The user is responsible for determining the suitability of LINAK products for specific application. LINAK takes great care in providing accurate and up-to-date information on its products.
However, due to continuous development in order to improve its products, LINAK products are subject to frequent modifications and changes without prior notice. Therefore, LINAK cannot guarantee the correct and actual status of said information on its products.
While LINAK uses its best efforts to fulfil orders, LINAK cannot, for the same reasons as mentioned above, guarantee the availability of any particular product. Therefore, LINAK reserves the right to discontinue the sale of any product displayed on its website or listed in its catalogues or other written material drawn up by LINAK.
All sales are subject to the Standard Terms of Sale and Delivery for LINAK. For a copy hereof, please contact LINAK.

LINAK®
WE IMPROVE YOUR LIFE

LINAK A/S reserve the right to make technical alterations
Copyright© LINAK 2010.05 MA-M9-02-193-E